The Veterinary Record

FOUNDED BY WILLIAM HUNTING. F.R.C.V.S., 1888.

No. 7. FEBRUARY 17, 1940. Vol. 52.

THE HORSE IN WAR-TIME

1.—THE ECONOMICS OF HORSE MAINTENANCE

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During the present war period there has been a sharp decline in motor transport, particularly commercial motor transport. Many motor manufacturing plants have been converted for the production of ammunition and other War Office requirements; the motor tax has been increased and petrol—in addition to its enhanced price—is rationed. These factors tend to cause a reduction in the number of motor vehicles on our roads and a sudden rise in the cost of motor transport.

As a result of these recent changes, the attention of firms requiring continuous transport for their businesses has been turned to horse transport.

During the Great War, the civil horse population of this country was very much reduced in order to meet the needs of the Army; in addition to the home supplies it was necessary to purchase horses in many different countries throughout the world to meet the demands of the years 1914-1918. Also there was such a demand for forage and grain for Army horses that the cost of these materials rose rapidly; at one period the price of hay rose to £18 per ton. As a consequence of the shortage of horses and the abnormal scarcity and high prices of forage, firms adopted motor haulage. In many cases they did not revert to the horse when conditions were eased. Exactly opposite conditions prevail to-day; the cost of motor haulage is rapidly on the up-grade, while the cost of horse transport does not show anything like the same percentage increase.

The purchase price of the commercial horse has not altered much during the past 25 years, and thanks to several good seasons we have an ample supply of hay, with practically little or no call from the Army during the present period, so that, economically speaking, the commercial horse at present is in a favourable position.

It has been well-established during recent years that where the work involves short journeys and frequent stops, the cost of horse transport is much cheaper than that of motor transport. The initial cost of a horse-drawn turnout is much below that of a motor used for the same class of work. A good turnout for milk or bread delivery can be purchased for round about £100, and heavy draught turnout would cost approximately £150. The average working life of the light transport horse in our towns is from 8 to 9 years, and that of the heavy draught horse from 6 to 7 years, whereas a well-made vehicle kept in good repair would last 20 to 30 years or even longer. Thus, the initial cost, the upkeep and the comparatively small depreciation of the horse-drawn vehicle shows advantage over the mechanical vehicle.

We recognise that the policy of the Government during the war period is to reduce imports to a minimum, therefore, we must consider that every pound of rubber and every gallon of petrol less which we import and which could be replaced by home-grown products, is a national advantage. By using horse-drawn transport to replace motors, the necessary fodder or fuel can be home-grown and the by-products in the form of manures are a valuable asset to agriculture.

In the case of mechanical vehicles the initial cost is higher, the working life is shorter, the depreciation is heavier and the upkeep involves the importation of petrol, rubber, etc. In consequence, the comparison in costs of horse-drawn and motor-drawn transport at the present day is more marked than previously.

From the agricultural point of view, many advantages are gained by breeding draught horses. Young horses on a farm earn their keep from two years up to five years old, during which time they appreciate in value and do not require imported products for their upkeep. If horses are disposed of from the farm at five years old, they show a direct financial gain to the breeder; on the other hand, if they are kept on the farm they can continue to be used for a working life of from 12 to 14 years, all of which is an advantage to agriculture. The cost of maintaining working horses on the farm, especially when they are turned out the greater part of the year, is comparatively small. In a leaflet issued by the National Horse Association of Great Britain the following example is given of comparative costs :—

A leading transport firm on a basis of 20 miles per day.

	Light Horsed Vehicle (One Horse).		Heavy Horsed Vehicle (Two Horses).		Motor Van (25 cwt.).		Heavy Lorry (4 tons).	
	s.	d.	s.	d.	s.	d.	s.	d.
Cost per day of eight working hours	17	9	25	7	24	2	36	6
Cost per hour	2	2½	3	2½	3	0½	4	6½

A large London stores computes its daily costings for 313 working days per year, and eight hours per day, at 18s. 10d. for single light horse van, £1 4s. 1½d. for a 25 cwt. motor van, £1 4s. 2d. for a pair-horse van, and £1 7s. 8½d. for a 3-ton motor lorry.

The "all-in" costings of one of London's dairy companies with a large stud of cobs works out at 13 shillings and 9·38 pence per single-horsed vehicle per day.

A co-operative business concern in the provinces with a stud of 400 horses and 80 motor cars for house to house delivery of commodities such as coal, milk and bread, gave their costings per week as follows: Single-horse vehicle, £5 15s. 7½d.; 25 cwt. motor vehicle £10 0s. 7·2d. (per week of 48 hours); pair-horse vehicle £5 18s. 7½d. per horse; 4-ton lorry, £15 8s. 7·4d. (per week of 48 hours).

The daily costings of a London municipality are estimated at 18s. 10d. for a single-horsed vehicle, while those of a 4-ton lorry are estimated at £2 5s. 8d.

From all this it will be seen that the cost of transport is in favour of the horse.

With our modern smooth roads, whereby the drag on the wheels is reduced, together with modern roller bearings and axles, horses are capable of drawing much heavier loads than formerly; in fact, it is found in practice that horses working in the usual type of vehicle, when put into those with roller bearings, carry out their work with much greater ease and tend to become too fat.

One of the difficulties in this mechanical age, when there is a sudden increase in the horse studs, is to secure grooms, drivers and shoeing-smiths. Most Englishmen are natural animal lovers and such, with little training, take to work connected with horses like ducks to water.

Education authorities would meet a need and perform a useful national service at the present time by establishing evening classes for grooms, drivers and shoeing-smiths.

ARMY VETERINARY SERVICE

London Gazette—War Office—Regular Army

February 2nd.—Maj. F. B. Hayes, O.B.E., to be Lt.-Col. (February 3rd).

Emergency Commissions

February 6th.—To be Lieuts. (January 8th): J. E. M. Ridge, J. P. Wilmot-Smith.

The notification regarding Capt. and Bt.-Maj. E. Ross-Smith in the Supplement to the *Gazette* of January 30th is cancelled.

Regular Army Reserve of Officers

Lt.-Col. V. C. Leckie, D.S.O., having attained the age limit of liability to recall, ceases to belong to the Reserve of Officers (August 25th, 1938).

* * * * *

That several valuable farm horses had to be destroyed as a result of accidents caused by the treacherous condition of roads was stated at a meeting of County Donegal Roads Council, when a deputation of farmers appeared to protest against the continued policy of tarring main thoroughfares without leaving any facilities for horse traffic. The matter was referred to the road surveyor, who promised to make the roads as non-slippery as possible.

INVESTIGATIONS INTO THE CONTROL OF BLACKHEAD IN TURKEYS

K. D. DOWNHAM, B.V.Sc., M.R.C.V.S., D.V.H.

The following article is a short résumé of investigations carried out by the writer upon the treatment of blackhead in turkeys with arsphenamine diglucoside.*

Blackhead is the name given to a disease of turkeys caused by a protozoan parasite, *Histomonas meleagridis*; the disease is characterised by inflammation of the intestines, particularly the blind gut (caeca), and of the liver. Blackhead is the most serious cause of loss to turkey raisers and occurs in all countries where turkey farming is practised.

Many turkey rearers have realised, from costly experience, that turkeys are more difficult to rear than ordinary chickens, and that if the rearing ground has not been used by turkeys or other types of poultry previously, they are much more likely to be successful in turkey rearing. The reason for this established fact is that turkeys are very susceptible to infection with the parasite *Histomonas*, and that ordinary chickens are practically immune to such infection, but are capable of acting as carriers and of leaving infection on the ground which they have occupied. Turkeys raised on this ground or in contact with chickens or adult turkeys become infected with the disease.

Some investigators believe, and there is a good deal of evidence in favour of the opinion, that two types of parasite are involved in an outbreak of blackhead. It is thought that the small one-celled organism, *Histomonas meleagridis*, enters the common caecal worm of chickens and becomes established in the egg of this worm, and when the latter is passed to the ground with the droppings of the bird it remains in the worm embryo and larva for many months, and possibly for years. When these infected larval forms of the caecal worm are swallowed by susceptible birds blackhead results.

To control blackhead successfully it is necessary to prevent infestation with caecal worms and other parasites which are concerned with conveying the disease to susceptible birds, and to treat those which are infected with blackhead with a drug which will destroy the causal organism of blackhead without injuring the tissues of the bird's body.

Investigations by the writer have indicated that it is possible to raise the resistance of turkeys to parasitic infestation by proper methods of feeding and management. It has been shown also, that to control successfully an outbreak of blackhead it is necessary to treat birds in the early stages of the disease, and to prevent re-infestation after treatment.

One of the early symptoms of the disease is a change in the colour of the young turkey's droppings to a sulphur yellow tinge; such birds should be isolated and treated immediately and the other members of the flock should be treated and then moved to clean ground.

*Arsphenamine diglucoside, sold under the name of Stabilarsan Veterinary, was used in these experiments. Other similar preparations are Vetarsenobillon (Tryparsamide), Myosalvarsan and Neo-salvarsan.

On account of the very rapid growth rate of turkeys it is most important to pay particular attention to their diet. Fresh green food has been found to be particularly valuable, if not essential, for growing turkeys and should be liberally supplied.

Excellent turkeys were raised on the following rations :—

Up to 10 Weeks Old.

Maize meal	20 per cent.
Wheatings...	30 „
Bran	15 „
Sussex oats	7 „
Alfalfa	6 „
Dried skimmed milk ...	7 „
Cod liver oil	2 „
Protein supplement ...	10 „
Dried yeast	3 „

10 Weeks and Onwards

Maize meal	20 per cent.
Wheatings...	30 „
Bran	20 „
Sussex oats	8 „
Alfalfa	5 „
Dried skimmed milk ...	5 „
Cod liver oil	2 „
Protein supplement ...	8 „
Dried yeast	2 „

The protein supplement consisted of :—

Soya meal	40 per cent.
Meat meal (60 per cent.)...	20 „
Blood fibrinogen	20 „
Iodised mineral salts ...	20 „

The feeding of chopped onions to young turkeys has been found to be sound practice, and in these investigations onions appeared to be of value as a deterrent to parasitic infestation.

In previous investigations carried out by the writer, blackhead occurred in birds 20 days after they were placed upon ground known to be infected with the causal parasites. Following the feeding of turkeys with the rations given, *plus* onions and abundant green food, the birds placed upon the same infected ground did not suffer from the disease for over two months, and the number of affected birds was considerably less than previously.

The tables which follow (*see also overleaf*) show the results of intravenous injections with arsphenamine diglucoside under different methods of management.

Summary and Recommendations Regarding the Control of Blackhead

The investigations upon blackhead in turkeys have brought out the following points :—

1. That it is advisable to inject birds with an organic arsenical preparation, such as arsphenamine diglucoside intravenously or intramuscularly, in the early stages of the disease, and to remove the birds after dosage to clean ground which has not been used previously for poultry keeping.

2. When birds cannot be moved to clean ground, the chances of controlling blackhead by the use of such a drug are much smaller; on some holdings it is impossible to control the disease because of re-infestation. In such cases the owner would be advised to treat his birds and rear them in intensive houses with sun parlours and wire floors.

3. When the ground used by turkeys is not heavily stocked and blackhead occurs, several injections of the arsenical preparation at intervals of not more than nine days should be given.

4. Turkey chicks proved far more susceptible to contagious catarrh than ordinary chicks, and every care should be taken to provide adequate floor inlet ventilation in the brooding houses without draughts.

5. Preliminary experiments upon the nutrition of turkeys indicate that there is every possibility of considerably raising the resistance of turkeys to blackhead, parasitism and diseases associated with artificial rearing, by suitable methods of feeding and management.

6. The investigations also showed that deficiency diseases of turkeys may be eliminated with proper feeding and management of the flock.

I wish to acknowledge, with grateful thanks, the assistance of Messrs. Boots Pure Drug Co., Ltd., who financed the experiments and through whose generous help these large-scale experiments were able to be carried out.

My thanks are also due to Mr. J. A. J. Venn, M.R.C.V.S., D.V.S.M., and to Mr. D. W. P. Bythell, B.A., M.R.C.V.S., who have assisted in the carrying out of these experiments.

Table I

Turkeys treated with Arsphenamine Diglucoside, ONE injection only, then removed to fresh ground.

Case No.	No. of birds in flock.	No. of deaths *prior* to treatment.	No. treated.	No. untreated *controls*.	Age when treated.	Dose.	No. of deaths *after* treatment.	No. of deaths in *controls*.	Remarks.
1	190	5	190	—	5 months	2 c.c.	—	—	—
2	26	4	12	14	8 weeks	0·8 c.c.	—	5	—
3	43	2	43	—	8 „	0·8 c.c.	—	—	—
4	182	6	170	—	3½ months	1·5 c.c.	—	—	—
5	45	1	45	—	3½ „	1·5 c.c.	—	—	—
6	30	2	30	—	4-5 „	1·6-2 c.c.	—	—	—
7	100	3	100	—	4 „	1·6 c.c.	2	—	Very ill at time of injection
8	130	5	130	—	3½ „	1·5 c.c.	—	—	—
9	49	8	49	—	8 weeks	0·8 c.c.	—	—	—
10	37	4	37	—	9 „	0·9 c.c.	—	—	—
11	120	Several	120	—	10 „	1·0 c.c.	—	—	—
12	130	5	130	—	15 „	1·5 c.c.	—	—	—
13	17	3	17	—	15 „	1·5 c.c.	—	—	—

TABLE II

TURKEYS TREATED WITH ARSPHENAMINE DIGLUCOSIDE, ONE INJECTION ONLY, REMAINED ON SAME GROUND

Case No.	No. of birds in flock.	No. of deaths *prior* to treatment.	No. treated.	No. untreated *controls*.	Age when treated.	Dose.	No. of deaths *after* treatment.	No. of deaths in *controls*.	Remarks.
1	54	9	54	—	3 weeks	0·3 c.c.	9	—	—
2	47	2	57	—	10 „	1·0 c.c.	7	—	—
3	11	6	11	—	—	—	3	—	8 left given another injection
4	60	2	60	—	15 „	1·5 c.c.	2	—	—

TABLE III

TURKEYS TREATED WITH ARSPHENAMINE DIGLUCOSIDE, REPEATED INJECTIONS, REMAINED ON SAME GROUND.

Case No.	No. of birds in flock.	No. of deaths *prior to* treatment.	No. treated.	No. untreated *controls*.	Age when treated.	Dose.	No. of deaths *after* treatment.	No. of deaths in *controls*.	Remarks.
1	16	—	8	8	6 months	Commencing 1·2 c.c. increasing by 0·2 c.c.	3	3	—
2	14	Large percentage	7	7	„	2·0 c.c. etc.	—	1	—

CLINICAL COMMUNICATION

ABDOMINAL HERNIA IN A CAT

H. KIRK, M.R.C.V.S.

A blue short-hair cat, about two years old, which lived with its owner in a top flat, and practically never left the precincts of its home, was described to me over the telephone as having become rather dull and off its food for the past twelve hours. Examining the cat I found nothing abnormal except what appeared to be a dropsical enlargement occupying the left flank and bulging down the anterior aspect of the near hind leg. It seemed as though the loose skin in that region had become a bag to contain some kind of fluid, quite painless and non-inflammatory. There was absolutely no history pointing to the possibility of any kind of accident or illness preceding my visit. Injury was regarded as an impossibility for this cat, leading, as it did, such a protected life. Yet I came to the conclusion that hernia was the most likely diagnosis, and upon turning the cat on to its back, I was able to make the sac disappear. On that conclusive proof, the cat was removed and operated upon under nembutal administered intraperitoneally. The masses of extra- and intra-abdominal fat made the operation one of some difficulty especially as there was a transverse rent in the abdominal muscle just on 3 inches long. Recovery was uneventful.

This simple case is recorded for two reasons, *viz.*: that abdominal hernia in cats is exceedingly rare in private practice. I cannot remember such a case in my own practice since 1912. Secondly, in the face of such a history as was given to me, one might conclude that the swelling must be due to serum or dropsical fluid, if one entertained the normal contention that no abdominal wall could rupture in a healthy young cat without violence. My own theory was that the cat, in passing through a doorway, had become caught by the door slamming in a draught. On the other hand there was no evidence of subcutaneous bruising.

IMPROVEMENT OF LIVE STOCK SCHEMES (SCOTLAND)

The National Farmers' Union and Chamber of Agriculture for Scotland have been informed that in view of the paramount need for the strictest economy in public expenditure during the war emergency it has been found necessary to review the operation of the Department of Agriculture's scheme for the improvement of live stock. Decisions as to the continuance of these schemes in 1940 have now been reached after careful consideration of all the circumstances.

The schemes applicable to the Congested Districts will be continued without alteration. These schemes are the Cattle Breeding Scheme, Part I (Supply Bulls), the Sheep Breeding Scheme, the Highland Pony Stallion Scheme, and the Heavy Horse Breeding Scheme. The last mentioned is applicable only to the islands of Orkney, and Argyll.

The schemes applicable to all countries in Scotland are the Cattle Breeding Scheme, Part II (Premium Bulls), the Pig Breeding Scheme (Premium Boars), and the Goat Breeding Scheme. It is regretted that it is necessary to discontinue approval of additional bulls or boars for payment of grant and consequently no first year premium will be payable. The Cattle Breeding Scheme is, however, being continued in modified form for the offer of second, third and fourth year premiums for bulls which qualified for first, second and third year premiums respectively in 1939, provided that the animals are again passed as suitable by representatives of the Department. The Pig Breeding Scheme is similarly being continued for the offer of second year premiums in respect of boars for which first year premiums were awarded in 1939. The Goat Breeding Scheme is being discontinued.

THE VETERINARY RECORD

February 17th, 1940.

"CURES" FOR CONTAGIOUS BOVINE ABORTION

CLAIMS are made from time to time that some new preparation or method of treatment is of value in the cure or control of contagious abortion of cattle, and since, on the one hand, this disease is widespread and causes great loss, and on the other hand, the known methods of control appear somewhat burdensome to the farmer, these claims are received by many of the farming community and, indeed, by some of our own members, without any reserve or further enquiry as to the value of the so-called evidence on which they are based. We have ample evidence of this in the numerous remedies which have been and are now on the market for bovine contagious abortion, and the widespread use which they receive.

Short of laws prohibiting the marketing of such preparations until their value is proven, such as exist in the U.S.A., or of the carrying out and wide publication of trials (official or unofficial), a course favoured, *e.g.*, in Germany, little can be done except by education of the farming community. In this matter the veterinary profession should be in the forefront. We are, or should be, by our training, critical; we are in contact with literature, original or abstracted, on these matters, or can discuss them with those of our members who are; and we meet numerous members of the farming community daily. Who else has a like opportunity to influence the outlook of the animal owner in these matters? Can we not so use our privileged position as to influence farming opinion so that it refuses to accept claims unless they are supported by adequate evidence?

We referred in our abstract section last week to an official test by the German government of the product "Serobortan." It is claimed for this preparation that when given with a specific dead vaccine of *Br. abortus* (D vaccine or Yatren vaccine) it will cure bovine contagious abortion in the sense of reducing or abolishing specific blood reactions and excretion of the causal organism in the milk. Drs. Zeller and Henninger, in an official test, were completely unable to confirm these claims (or those made for another preparation "AO_3"). Twenty animals in all were treated exactly according to the claimants' directions but with entirely unsuccessful results. We also published in our last issue an article by Dr. A. D. McEwen, and Major G. E. Oxspring showing that the administration of "Abortulin," a product much advertised in this country as a treatment for contagious abortion, failed to cure two cows infected with this disease.

REPORT

Replacement of Meals in Pig Feeding by Home-grown Foods

RESULTS OF THE "LEHMANN SYSTEM" EXPERIMENTS

The Pig Experiments Co-ordinating Committee, set up by the Minister of Agriculture and Fisheries, has recently issued a report dealing with the results of some experiments carried out in 1938-39 on the so-called "Lehmann system" of pig feeding. This contains information which may be of interest to our readers and we propose to give some account of the results obtained.

Experiments were conducted at four centres: Cumberland, Durham, Hertfordshire and Lincolnshire. In each, the general plan was similar though the home-grown foods used varied according to what happened to be available locally.

Perhaps a short account of the Lehmann system will not be out of place. It consists of providing a minimal basic amount of high-grade nutrients, which are intended to provide all the essential substances needed for proper maintenance of life and health, and then to supply quantities of bulky foods of lower energy value, which the pig can eat up to its full appetite capacity; these are utilised for fattening. As practised in Germany, the method consists of feeding 1 kilo. (2·2 lb.) of the basal ration consisting of 70 per cent. cereals and 30 per cent. protein substances, supplemented by various bulky foods.

In the experiments carried out in Britain recently, the pigs were Large Whites and Essex X Large White crosses, and they were put on to the system when between 40 and 60 lb. live weight. At each centre, the pigs were killed—some at 200 lb. and some at 250 lb. live weight—and carcases were examined subsequently. Some pigs were kept as controls and fed on a standard ration, at the rate of 2½ lb. per head per day at 50 lb. live weight, increased to 4 lb. at 100 lb. and increased subsequently at ⅔ lb. per head per day for each 20 lb. increase above 100 lb.

The Standard Ration for the control fed pigs was as follows:—

Live Weights.	Weatings.	Barley Meal.	Flaked Maize.
50 to 140 lb.	30	38	20
140 lb. to bacon weight	30	43	20

Live Weights.	White Fish Meal.	Extracted Soya Bean	Minerals.
50 to 140 lb.	7	3	2
140 lb. to bacon weight	—	5	2

Lucerne meal was added at the rate of 2 lb. per 100 lb. of meal.

The pigs on the "Lehmann system" received 2½ lb. per head per day of a meal mixture at 50 lb. live weight, and this remained fixed throughout the fattening period. To allow of some adjustment in the amount of protein fed, two mixtures were constructed, one low in protein, the other high, and these were

combined according to whether the bulky food was deficient in protein or not. These mixtures No. 1 and No. 2 were as follows :—

No. I. Cereal Mixture.		No. II. Lehmann Mixture.	
Weatings ...	40	Weatings	35
Barley meal ...	40	Barley meal	30
Maize meal ...	20	White fish meal	20
		Extracted soya bean meal ...	10
	100	Lucerne meal	5
			100

The experiments were commenced when the pigs weighed 50 lb. live weight, with 1 lb. of No. 1 and 1½ lb. of No. 2, and thereafter the proportions were adjusted according to requirements in relation to the supplementary bulky foods used. Thus, when potatoes were fed, the basal ration was 2½ lb. of No. 2 ; when green foods were fed, the proportions mentioned earlier were used.

Cumberland Centre.—Here the supplementary foods were potatoes and later pulped mangels. They were fed in amounts up to the maximum of 20 lb. per head per day in each case. The basal ration was 2½ lb. of No. 2. The summarised results from this centre are as follows :—

Period of Experiment—Oct. 7th to Dec. 23rd (77 days)
Six Pigs in each Pen

	Potatoes as Supplementary Food.		
	Control Pen (A).	Lehmann Pen (B).	Lehmann Pen (C).
	(Lb.)	(Lb.)	(Lb.)
Average weight per pig on Oct. 7th	47·0	47·0	46·5
Average live weight gain per pig	73·7	79·0	74·3
Average live weight gain per pig per day ...	0·96	1·03	0·96
Average weight of meal consumed per pig ...	270·0	192·0	192·0
Lb. meal per 1 lb. live weight gain	3·66	2·42	2·58
Average weight of potatoes consumed per pig ...	—	261·0	261·0
Lb. potatoes per 1 lb. live weight gain	—	3·29	3·51

During the experiment it seemed that 3 lb. of potatoes replaced 1 lb. of meal. Following the potatoes a short period of swede feeding took place, and then on January 6th the pigs were put on to pulped mangels as the supplementary food until time of slaughter. The results were :—

	Mangels as Supplementary Food.		
	Pen (A).	Pen (B).	Pen (C).
	(Lb.)	(Lb.)	(Lb.)
Average weight per pig on Jan. 6th	137·5	140·5	132·1
Average live weight gain per pig	90·3	84·3	80·7
Average live weight gain per pig per day	1·53	0·77	0·72
Average weight of meal consumed per pig	407·0	276·0	279·0
Lb. meal per 1 lb. live weight gain	4·51	3·27	3·46
Average weight of mangels per pig	—	1,927	1,990
Lb. mangels per 1 lb. live weight gain	—	22·9	24·7

Mangels replaced meal at the rate of about 21 lb. per lb.

Meal consumption over the fattening period was reduced by nearly 230 lb. per pig, but it took about six weeks longer for the Lehmann pen pigs to reach slaughter weights. The carcases showed some interesting differences. The Lehmann pigs had a thinner back-fat and the streak tended to be thicker. There was a greater bone development, longer legs and heavier trotters. No differences in killing percentages were shown ; they ranged from 74 to 79 per cent.

It is perhaps not necessary to give results from other centres in such detail, but the salient points from each will be mentioned.

Durham Centre.—At this centre, fresh drum-head cabbages and kale were used as supplementary foods at first, at about 4 lb. per head per day, and later steamed potatoes, up to 16 lb. per head were fed. The cabbages did not satisfy the pigs so well as the potatoes, but no trouble was encountered. Slightly more than 3½ lb. of cabbage were needed to replace 1 lb. of meal and just over 3 lb. of potatoes were found to do the same. Meal consumption was reduced by about 300 lb. per pig, and the Lehmann pigs were fattened in as short a time as the controls. The carcases showed a thicker bone and were satisfactory.

Hertfordshire Centre.—Potatoes were used as the first supplementary food (up to 10 lb. per head per day) and later sugar beet pulp (up to 2 lb. per head per day) was used. The potatoes were boiled and the beet pulp soaked in cold water. From the results it seemed that 4½ lb. of potatoes replaced 1 lb. of meal, the beet pulp was fed for too short a time to assess its equivalent value. Meal consumption was reduced by about 260 lb. per pig, but about one month longer was needed to fatten the pigs on the Lehmann system. The carcase results were similar to the Cumberland results. Pigs were on the whole less fat and had a greater bone development. Otherwise they were quite satisfactory.

Lincolnshire Centre.—Here steamed potatoes were used for one Lehmann pen and unmarketable waste whole cabbage followed by sugar beet tops silage and finally fresh green lucerne were fed to a second Lehmann pen. The beet tops silage was made in a pit silo and well consolidated. It was of the sour type, unpleasant in appearance, smelled strongly and was not relished. Powdered chalk was fed with it for the first ten days, but was discontinued as it caused some constipation. A maximum of 18 lb. per day was fed. Cabbages up to 2 lb. per day preceded the silage and lucerne up to 20 lb. per day was used during the final feeding stage. The pen on potatoes

did best. They were apparently practically as efficient as the control rations. The cabbage-silage-lucerne fed pigs did not do so well. They dressed out at an average of 72 per cent. only, as against 76-77 per cent. for the others. They were the least fat and had a greater bone development. On the potato supplement, meal consumption was reduced by about 330 lb. per pig and on the green supplements by about 170 lb. The potato-fed pigs fattened to killing weight before the controls, but the green-fed group took six weeks longer to finish.

Conclusions

The experiments show that by feeding a limited fixed amount of a basal meal ration, supplemented by various bulky foods fed to appetite, it is possible to reduce very considerably the amount of meal used to produce a bacon pig. In some cases, the reduction is quite 50 per cent.

The supplements used were potatoes, cabbage, kale, mangels, swedes, sugar beet pulp and silage and lucerne. Other foods that might be used are : broccoli refuse, sprouts and other brassica crops, green pea-haulms, aftermaths of clover and hay, and various green crops.

The time taken to reach 200 lb. may be increased by from four to six weeks, but in some cases may be no longer than under the usual full meal system.

Carcase quality is not appreciably lowered, though with the slower growth a bigger-framed animal may be obtained.

. . . . .

We deem it appropriate to insert here, in association with the foregoing, the following item from a recent issue of the Ministry of Agriculture Weekly News Service : —

Helping out the Pig Ration

Experiments with Bulky Fodders and Small Meal Allowance

Interesting experiments are now being made to see how far pigs can be fattened on a limited supply of meal if they are given home produced bulky foods such as sugar beet tops, waste cabbage, kale and similar crops.

Sugar Beet Tops.—There may still be sugar beet tops available in some localities. At Chelmsford, pigs fed on 2½ lb. of meal per day since they weighed 100 lb. have made an average daily gain of ¾ lb. on this ration supplemented by beet tops. At 150 lb. live weight they were receiving about 9 lb. of tops per head daily. The saving has been about 1 lb. of meal per lb. of live weight gain compared with pigs on a full meal ration. But they look like taking six weeks longer to reach the factory. In a similar experiment in Hampshire, however, pigs thus fed have made gains almost as good as those on a normal full meal ration.

Care is needed in feeding tops. They must be clean and free from grit, and they must be introduced very gradually into the ration, allowing only one or two tops per pig daily for a start. It is not advisable to begin feeding the tops until the pigs have reached about 80 lb. in weight. A good way is to let the pigs have some of the tops in the morning after their meal and the rest in the afternoon.

Marrow Stem Kale.—In experiments at Cambridge, Monmouth, Oxford and in the Midlands, up to 20 lbs. of marrow stem kale a day have been fed to pigs of about 7 score weight. In practice, it might be better not to exceed 10 to 15 lb. daily. It is best to wilt the kale for 24 hours and give it in chopped form if possible. This crop also must be introduced gradually to avoid digestive disturbance and it should never be fed in a frozen condition.

Mangels and Swedes.—Mangels and swedes, the most commonly available roots just now, can be fed to fattening pigs and breeding stock as supplements to a reduced ration of meal. At Cambridge sows are being fed on a very limited amount of meal plus pulped swedes. One group of sows are getting 2 lb. daily per head of a mixture of wheatings, barley meal, bran and bean meal; the other group receives only 1 lb. of this mixture. The rest of the ration is made up of swedes, of which about 30 lb. per head are fed daily to the first group and 40 lb. to the second. The sows are in a large covered yard and care is taken to see that the roots are not frozen.

At Reading fattening pigs are receiving 2½ lb. of meal per day together with a mixture of chopped mangels and locally obtained biscuit waste. This appears to form a very palatable mixture and pigs of about 60 lb. weight are receiving 4 to 5 lb. per day.

ABSTRACTS

[**I.—BRUCELLA ABORTUS INFECTION IN GOATS.** Doyle, T. M. (1939.) *J. comp. Path.* **52.** 89; **II.—AN ESTIMATE OF A SUITABLE INFECTIVE DOSE OF BR. ABORTUS FOR IMMUNISATION TESTS ON CATTLE.** McEwen, A. D., Priestley, F. W., and Patterson, J. D. *Ibid.* p. 116; **III.—THE DEMONSTRATION OF IMMUNITY IN CATTLE VACCINATED WITH A NON-VIRULENT STRAIN OF BR. ABORTUS.** McEwen, A. D. *Ibid.* 129.]

I.—The first article describes a series of experiments on the pathogenicity of *Br. abortus* for goats and contains a concise review of the literature relating to this subject.

The first four experiments are concerned with the inoculation by the conjunctival route of a standard suspension (three drops of suspension with the opacity of tube No. 10 of Brown's scale) of six different strains into pregnant goats. Of 48 goats infected, 36 (75 per cent.) aborted and it was found that the average interval between infection and abortion in these goats was 54 days—the shortest period being 25 days and the longest 100 days.

A second series of experiments was designed to investigate whether serial passage of two strains of *Br. abortus* through goats had any influence on their pathogenicity for cattle. One strain was passaged for a period of 385 days through six goats and at this time a fairly large dose injected by the conjunctival route into a pregnant heifer caused abortion, while a similar result was obtained with a second strain passaged for 318 days in five goats. The fact that no change in the pathogenicity had been produced was confirmed by tests in guinea-pigs.

It was found that about 60 per cent. of the goats used in the first series of experiments harboured *Br. abortus* in their milk and that the organism could be recovered up to 386 days after inoculation.

By exposing uninfected pregnant goats in premises where recently aborted goats were maintained, it was found that *Br. abortus* infection was not communicated naturally to goats. During the course of the experiments 63 blood cultures were made from 40 artificially-infected goats and three positive results were obtained. The author observes that this finding is in marked contrast with the high percentage of positive blood cultures obtained from goats infected with *Br. melitensis*.

II.—This is an account of experiments designed to test the effect of exact numbers of a virulent *Br. abortus* culture on pregnant heifers.

The authors, after reviewing the literature relevant to this subject, point out very clearly the need for such experiments before conducting accurate immunisation studies. It may be seen from this review that factors such as the susceptibility of individual animals, the size of the infecting dose and the route of its administration have varied considerably and, therefore, it is difficult to make comparisons between any two experiments.

In the present studies, a strain of *Br. abortus* which had been preserved by drying *in vacuo* over P_2O_5 was used to infect groups of pregnant heifers using for this purpose graded doses containing known numbers of organisms for infecting each group. By preliminary tests on guinea-pigs it was shown that this strain had maintained its virulence since the time of its isolation two years previously. Five groups of heifers containing nine to ten animals in each group were included in the test and each animal was given the infecting dose by dropping 0·1 c.c. of suspension on to the conjunctiva. The progress of gestation is illustrated in the form of tables as well as the results of biological and cultural tests on aborted foetuses, foetal membranes and colostrum.

It was found that the infectivity of the strain was directly related to the numbers of organisms inoculated. The largest dose (viable count $1{,}460 \times 10^4$ organisms) caused infection and abortion in nine out of nine heifers, while the incidence regularly decreased as the dose diminished until the lowest dose (1,460 organisms) only infected two out of nine heifers and failed to produce abortion. The period intervening between infection and the appearance of agglutinins in the blood varied inversely with the number of organisms.

The authors discuss the application of their results in selecting appropriate doses for determining the degree of resistance following vaccination and suggest that $1{,}460 \times 10^4$ organisms of the strain tested constitute a sufficiently severe dose for this purpose.

III.—McEwen describes an experiment which was designed to demonstrate the immunity developed in vaccinated cattle to the larger infective doses used in the preceding experiment. Ten cattle were inoculated on three occasions with a non-virulent strain of *Br. abortus* (strain 45) at the fourth and fifth month of pregnancy. Five later received a large dose of virulent culture ($1{,}460 \times 10^6$ organisms) while five received one hundredth of this dose, *viz.*, $1{,}460 \times 10^4$ organisms.

This experiment was run concurrently with the infection experiment previously described so that comparable data on non-vaccinated cattle were available.

It was found that vaccination did not confer any resistance to the large infective dose whereas the less severe dose produced fewer abortions in the vaccinated cattle than in the controls.

S. J. E.

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[DIAPHRAGMATIC HERNIA IN EQUINES NOT OF TRAUMATIC ORIGIN. Trum, B. F. (1939.) *Vet. Bull. U.S. Army.* **33.** 297-300. (3 refs.).]

Three cases of diaphragmatic hernia in horses are described, none of which appeared to be traumatic in origin.

The first case was a four-year-old gelding which became ill while feeding. When examined, great restlessness, profuse sweating, and tenderness of the epigastric area were apparent. The temperature was 100·2° F., respirations were shallow and 50 per minute, and the pulse hard and 45 per minute. The animal was in obvious pain and frequently threw himself to the ground. Rectal examination revealed no abnormality. Anodynes were administered, but death intervened about 16 hours later. Autopsy revealed a 5-inch rupture in the tendinous part of the left side of the diaphragm through which several inches of small intestine had passed and become twisted.

The second case, in a twelve-year-old mare, showed similar symptoms. The carcase was extremely bloated at an autopsy which was conducted about 30 minutes after death. The examination revealed a diaphragmatic rupture about 14 inches long, at least 4 inches of which was certainly *ante-mortem* and possibly embryonic in origin.

The third case occurred in a four-year-old gelding. Treatment was commenced 36 hours after the first appearance of symptoms. At that time the patient was recumbent. Profuse sweating and dyspnoea were the outstanding symptoms. The mucous membranes were injected, the pulse 30 per minute, and the temperature 103° F. Intestinal peristalsis was active and could be heard over the thorax, but there had been no defaecation during the previous eight hours. On raising the animal in slings intense pain was manifest, but this was mitigated when the forequarters were elevated. Rectal examination showed no marked abnormality, but traction on the small intestines caused a sudden release of tension and an immediate improvement of the general condition. Respirations at once became normal, and recovery thereafter was uneventful.

In view of the cases quoted and after consideration of the embryology and anatomy of the diaphragm, it is advised that the possibility of diaphragmatic hernia should always be considered when dealing with cases of like syndrome. Unfortunately, percussion and auscultation of the chest are usually of little aid to diagnosis in such cases owing to the continual and often violent movements of the patient.

D. D. O.

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[INVESTIGATIONS ON JOHNE'S DISEASE OF SHEEP. McEwen, A. D. (1939.) *J. comp. Path.* **52.** 69.]

The occurrence of Johne's disease in a flock of Southdown ewes is described. The disease was first diagnosed in 1932 when it was responsible for a number of deaths and confirmatory evidence of its existence was obtained from the *post-mortem* examination of 26 ewes suspected to be suffering from the condition. It was not possible to determine the origin of the infection since the flock only came into contact at pasture with home-bred young cattle.

On testing the flock of 318 ewes with johnin by the intrapalpebral method 29 (9 per cent.) gave a positive reaction and 27 a doubtful reaction. By conducting a *post-mortem* examination on 14 sheep, it was found that the results of the johnin test could not be verified uniformly by finding evidence of disease, since three non-reactors showed macroscopic lesions, while five reactors showed no apparent evidence of disease.

The disease was manifested by clinical symptoms of emaciation, cachexia, intermittent diarrhoea and loss of fleece, while on *post-mortem* examination of advanced cases there appeared to be an absence of fat, thickening of the walls of the terminal part of the small intestine—easily recognisable by inspection of the unopened bowel wall—and distension of the lymphatic vessels. Acid-fast organisms were found in considerable numbers in the mucous membrane of the affected parts of the intestine and also in the associated lymphatic glands, but attempts to cultivate them on the media ordinarily used for the cultivation of Johne bacilli were unsuccessful. The histological picture was typical of that of Johne's disease and was characterised by accumulations of one type of cell, namely, the macrophage or large epithelioid cell.

The disease was established experimentally by feeding lambs with a suspension of scrapings taken from infected intestinal mucous membrane, while in adult sheep no success was obtained. Six calves fed in a similar manner all developed symptoms of Johne's disease after an incubation period varying from one to three years and typical lesions were found at *post-mortem* examination. In the infected cattle it was found that the application of the johnin test at intervals did not regularly provoke a positive reaction and the author discusses these anomalous results in relation to similar findings with habitually-infected cattle reported by other workers.

S. J. E.

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[EFFECT OF SOME SHORT-ACTING BARBITURIC ACID DERIVATIVES ON INTESTINAL ACTIVITY IN VIVO. Burstein, C. L. (1939.) *Proc. Soc. Exp. Biol. Med. N.Y.* **40**. 122-124. (1 fig. 5 refs.).]

Eight dogs were prepared with Thiry-Vella loops of the upper jejunum. After anaesthetisation with evipan, amytal, sodium thio-ethamyl, nembutal or pentothal in doses of 30 to 60 mg. per kilo. body-weight, tracings of intestinal movements were recorded by inserting a balloon into the loop and connecting to a water manometer at 12 to 15 cm. pressure. Pneumographic respiratory tracings were recorded simultaneously.

In all cases a marked reduction in amplitude of the intestinal contractions and a fall in general tonus occurred, and lasted for 5 to 15 minutes after injection. Immediately after, however, there was a gradual rise in tonus to above normal, and increased rhythmic contractions were maintained until the animal wakened.

D. D. O.

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[PRODUCTION OF EXPERIMENTAL OSTEOMYELITIS IN RABBITS BY INTRAVENOUS INJECTION OF STAPHYLOCOCCUS AUREUS. Thompson, R. H. S., Dubos, R. J. (1939.) *J. Exp. Med.* **68**. 191-206. (3 tables, 3 plates, 7 refs.).]

Observations made during the study of the relative virulence of different strains of staphylococcus in rabbits showed that in a number of cases distinctive bone lesions followed the intravenous injection of the organisms. Hitherto characteristic staphylococcal osteomyelitis has been experimentally produced only by artificial localisation of the organism in the bones. Isolation of a specific osteomyelitis-producing strain of *Streptococcus aureus*, however, has made possible the production of lesions by simple intravenous injection.

The strain used in this work was isolated from the lungs of a fatal case of human bronchopneumonia 19 years ago and has since been transferred each month on meat infusion agar. It is of the *aureus* type, strongly haemolytic and forming an active coagulase.

Initially it was found necessary to increase the virulence of the strain and to arrange the experimental conditions to obtain a relatively prolonged course of infection. This was accomplished by animal passage in rabbits in which a low grade immunity had been established.

Thirty-one rabbits were inoculated intravenously with 0·01 c.c. to 0·1 c.c. of broth culture of the organism. Nine of the rabbits died before sufficient time had elapsed for the development of macroscopic bone lesions. Eighteen showed clinical signs of disease and the remaining four were affected but showed only microscopic lesions.

Fifty-five bone lesions were present in the 18 clinically affected animals, 47 of them occurring near the ends of the long bones, but only eight being associated with purulent arthritis, which in all cases appeared secondary to an inflammatory process in the metaphysis. A serous effusion into joint cavities was, however, a common concomitant of the metaphyseal lesions. Multiple abscesses in the kidneys were usually present but other viscera and the muscles were usually free from disease. D. D. O.

REVIEW

[ANATOMY OF THE SHEEP'S BRAIN. E. A. Briggs, D.Sc., Assistant Professor of Zoology in the University of Sydney. Publishers: Angus & Robertson, Ltd., Sydney. Price: 6s.]

The brains of the domestic mammals are all built upon the same macroscopic plan. It is, therefore, fortunate that in the sheep we have an adequate and accessible supply of material for the purpose of anatomical study.

Dr. Briggs has given us, without undue compression or deletion, a clear and concise description of the macroscopic structure of the sheep's brain. The book is of 43 pages, with a satisfactory index and excellent illustrations.

Veterinary students will find it to be a most useful little book.

GENERAL MEDICAL SERVICE WITH THE FORCES

"Local medical war committees throughout the country," says the *Lancet*, "are now being asked to supply to the Central Medical War Committee the names of practitioners who are willing and available immediately for general medical service with the forces, and in particular with the Army.

"The upper age limit is 50 years, and a request is made that practitioners willing to offer themselves should inform the secretary of the local medical war committee, or write direct to the Secretary of the Central Medical War Committee, B.M.A. House, Tavistock Square, W.C."

There is now no waiting list for the R.A.M.C. and medical practitioners under 35 years of age, who have been registered for more than six months, are specially needed.

IN PARLIAMENT

Meat (Inspection)

In the House of Commons on Thursday of last week, Mr. Salt asked the Minister of Food whether he is aware that, since January 15th, 1940, when his Department assumed control of meat and the purchase of fat stock, no inspection of animals or meat is being carried out at certain centres, while at others much sound meat is being needlessly condemned; and, since the public health is on the one hand endangered, and a gross waste of human food and public money is occurring on the other, will he say what measures to correct these irregularities he proposes to institute?

Mr. Morrison: So far as I am aware, there has been no change in the inspection of animals prior to slaughter. As regards the inspection of meat, a joint circular has been issued to all local authorities in England and Wales by the Ministry of Health and the Ministry of Food, emphasising my desire to have the benefit of the statutory meat inspection services already provided by local authorities. It is hoped shortly to issue a similar circular to local authorities in Scotland. As regards the latter part of the Question, I have by the helpful co-operation of the Corporation of the City of London, appointed Mr. L. B. A. Grace, M.R.C.V.S., D.V.S.M., Chief Veterinary Officer of the Corporation, to be Technical Adviser to the Ministry on the Health Inspection of Meat. [Mr. Grace's appointment was announced in our issue of last week.—*Editor, V.R.*].

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Heavy Horse Breeding: Refusal to Withdraw Suspension of Grants

In the House of Commons last week, Sir T. Moore asked the Secretary of State for Scotland, in view of the expressed policy of the Government that it is desirable to make British agriculture as little dependent as possible upon imported material, what steps are being taken during the war period to stimulate the breeding of heavy agricultural horses in Scotland, thereby preventing unnecessary expenditure on mechanised transport using imported fuel?

Mr. Colville: I appreciate the object which my hon. and gallant Friend has in view, but taking all the circumstances into account and bearing in mind the fact that an increased crop of foals would be unlikely to affect the supply of agricultural horses during the war, I am not satisfied that special measures to stimulate heavy horse breeding are justified at the present time.

On the following day, Major Carver asked the Minister of Agriculture whether, in view of his desire that the trend of the agricultural industry towards becoming merely a factory industry producing finished goods from imported raw materials should be stopped, he will reconsider his recent decision to cease the subsidy for heavy horse breeding, thus making British agriculture more than ever dependent upon the use of imported fuel for mechanical transport?

Sir R. Dorman-Smith: The decision to suspend the making of fresh grants to heavy horse societies during the war was reached only after the fullest consideration, and I regret that I cannot see my way to withdraw the suspension. The satisfactory prices ruling for heavy horses should provide an inducement to farmers to continue breeding operations, but young horses bred in this and subsequent seasons are not likely to have any effect upon supplies of agricultural horses available during the war.

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The following are among the further questions and answers recorded in the House of Commons recently:—

Slaughterhouses (Departmental Representatives)

Mr. R. Duckworth asked the Chancellor of the Duchy of Lancaster whether all his representatives at the different slaughterhouse centres throughout the country have a professional knowledge of the butchering trade.

Mr. Lennox-Boyd: Yes, Sir.

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Poultry Advisory Committee

Mr. J. Morgan asked the Minister of Agriculture whether the Poultry Advisory Council is still in existence; and, if so, what are its present activities?

Sir J. Edmondson: The Poultry Advisory Committee established in 1927 has not been called together since 1937, although the committee has not been formally dissolved. To advise the Ministry on matters of interest to the poultry industry during the war, my right hon. and gallant Friend has set up a smaller Advisory Committee, which has so far met on four occasions, and considered various questions of interest to the welfare of poultry keepers.

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Poultry Industry (Feeding Stuffs)

Mr. Price asked the Minister of Food whether he is taking steps to secure that accredited poultry-breeding stations shall receive adequate supplies of feeding stuffs to maintain at least a portion of their stock in existence?

Mr. W. S. Morrison: Yes, Sir. On January 5th the chairmen of county feeding stuffs committees were asked to give special attention to the needs of owners of sound foundation poultry stock to enable them to obtain sufficient supplies of feeding stuffs, and in this connection attention was drawn to accredited breeders as being owners of such stock who could be readily identified. In addition, arrangements have now been made to establish in each county a small reserve of feeding stuffs which will be at the disposal of the chairmen of the county feeding stuffs committee, to meet emergency cases of genuine hardship; a breeder of sound foundation poultry stock, whether accredited or not, will be eligible to receive supplies from this reserve provided he is unable to obtain sufficient supplies through the usual trade channels to maintain his breeding stock.

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Poultry Keeping

Mr. De la Bere asked the Minister of Health whether, in view of the small response to the circular on poultry-keeping sent out by the Ministry to local authorities asking them to modify their rules in order to further facilitate the keeping of poultry on their estates, he will now send an official from the Ministry with a view to persuading, wherever possible, those councils who will only consider individual applicants or allow poultry-keeping on allotments to give a more general consent to this practice?

Mr. Elliot: The question of permission to keep poultry on a municipal housing estate is a matter for decision by the local authority, in whom the responsibility for the management of their housing estates is expressly vested by statute. My hon. Friend will appreciate, therefore, that I have no jurisdiction to intervene, and I doubt whether the course suggested would be justified, especially in view of the great pressure upon my staff at the present time.

Sir Percy Hurd asked the Minister of Agriculture whether, in view of the need for larger egg and poultry production, he will take steps to induce private landlords to permit poultry keeping by tenants under proper restrictions?

Sir J. Edmondson: My right hon. Friend has, of course, no powers of compulsion which would enable him to act as my hon. Friend suggests, but he feels confident that in the nation's interest private landlords will, as far as may be practicable, relax peace-time restrictions on poultry keeping; and he has taken such opportunities as he could to seek their co-operation to this end.

Sir P. Hurd: Will my hon. and gallant Friend convey to the Minister the suggestion that it might be useful to invoke the good offices of the county war agricultural committees, and especially of their agricultural officers in order to bring about a settlement of this question?

Mr. T. Williams: Will the hon. and gallant Member note a reply given to the hon. Member for Evesham (Mr. De la Bère) that if all arable farmers are allowed to retain on their farms all the cereals they produce, all poultry keepers will go out of existence?

Sir P. Hurd asked the Minister of Health whether he is aware that 85 councils have refused to permit poultry keeping by tenants despite his recent circular, while 126 will only consider individual applications or allow poultry keeping on allotments, which, in view of the opportunities for thieving from unfenced plots, is tantamount to a refusal; and what further steps he proposes to take?

Mr. Elliot: I have no comprehensive figures showing the action taken by local authorities in the matter. I would again emphasise that the management of their estates is expressly vested by statute in local authorities, and for this reason I am not satisfied that further action on my part reiterating the suggestion I have already made would be likely to achieve the object which we have in mind.

Sir P. Hurd: Is my right hon. Friend aware that very little attention is paid to many of his circulars? In a matter of such urgent importance as this, would he address a personal letter to councils which are not complying with his request?

Mr. Elliot: I am not sure that a personal letter would be given more attention than a circular. I would not like to suggest that a circular could be safely disregarded while a letter from the Minister must be attended to.

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Live Stock Feeding Stuffs

Mr. De la Bere asked the Minister of Agriculture, in view of the admitted importance of maintaining the live stock population of this country, and since it is possible to keep a greater head of live stock on arable farms than on grass farms, whether he will make some provision to enable farmers operating arable farms to retain, if necessary, the whole of the cereals they obtain from their arable land for the maintenance of the live stock on their own farms?

Sir J. Edmondson: A farmer is at present at liberty to retain for feeding to his own stock the whole of the cereals grown on his farm. In the case of wheat, however, he would, by so doing, have to forgo any deficiency payments to which he might otherwise be entitled under the Wheat Acts.

Mr. De la Bere: Is my hon. Friend aware that this is not a question of deficiency payments, but that what is wanted is confidence by the farmer that the Government will ensure equitable distribution and confidence that supplies will be distributed in such a way that the milling combines will not be able to dominate the position?

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Immature Live Stock Slaughter

Mr. De la Bere asked the Minister of Agriculture whether, with a view to maintaining the live stock population of this country, he will take some immediate steps to prevent the practice which is becoming prevalent of milk farmers killing their immature calves at about 10 days old as a result of the controlled prices per head being substantiallly below the prices obtainable at the outbreak of hostilities?

Sir J. Edmondson: It is a normal part of farming practice in dairying districts for farmers to market their surplus calves for slaughter as soon as possible after birth with a view to retaining milk supplies for human consumption. My right hon. Friend is not aware that slaughterings of immature calves are proceeding on an abnormal scale in relation to peace-time practice or on a scale that would jeopardise the maintenance of our live stock population; but my right hon. Friend the Minister of Food and he are keeping the situation under close review.

Mr. De la Bere: Is the hon. Gentleman aware that the position is that the Minister of Food fixes a price for immature calves which is lower than it was at the outbreak of the war, and that the farmers cannot send them to the market because it is not worth their while? By what right does the Minister of Food fix these prices below the cost of production? It is entirely wrong and unjustifiable.

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British Army: Horses

Mr. De la Bere asked the Secretary of State for War whether, in view of the substantial number of horses that have already been acquired by the Army for war purposes, it is possible to make some statement regarding future requirements in order that farmers throughout the country may be informed as to the best way they can assist the Government by holding a reserve available?

Mr. Stanley: I regret that it is not possible to make any forecast of future requirements, but I am sending my hon. Friend a copy of a notice on the subject which was issued for publication two months ago.

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Cock-Fighting

Mr. R. Gibson asked the Home Secretary how many complaints regarding cock-fighting were notified to the police during the year 1939; how many cases of alleged cock-fighting were investigated; how many prosecutions were taken, and how many convictions were obtained; and whether he has any statement to make regarding measures to suppress cock-fighting in this country?

Sir John Anderson: As the hon. Member has previously been informed, the police do their best to prevent infractions of the law on this subject and have a duty to take proceedings in any case where evidence can be obtained to support a prosecution. Having regard to the burden of the special duties falling on the police at the present time, I should not feel justified in calling upon every chief constable to make a special report giving the particulars mentioned in the Question.

POULTRY COUNCIL AND FEEDING STUFFS

Poultrykeepers have had a "raw deal" from the Government in the matter of feeding stuffs, states the National Poultry Council. Breeders are advised to write to their members of Parliament, and get questions asked in the House of Commons. The Council complains that insufficient quantities of feeding stuffs have been allocated for poultry, though large supplies are still being used for unproductive purposes. It is alleged: "Persistent rumours prevail that some country millers have so much English wheat on their premises that they do not know what to do with it."

Commenting on the Minister of Food's statement in the House of Commons that it had been possible to increase supplies for animal feeding stuffs for February to 66 per cent. of normal requirements, the Council adds: "Let us hope that this promised increase materialises, and is distributed evenly throughout the industry"

R.C.V.S. OBITUARY

MAJOR-GENERAL SIR JOHN MOORE, K.C.M.G., C.B., F.R.C.V.S.

Director, Veterinary Services, British Expeditionary Force, 1914-1918

A GREAT ARMY VETERINARIAN

The whole profession will share with his comrades of the Royal Army Veterinary Corps—both those contemporary with him and those who, now serving, hold him in affectionate esteem for the high tradition he left—a profound sense of loss in the death of Major-General Sir John Moore, K.C.M.G., C.B., F.R.C.V.S., Director of Veterinary Services of the British Expeditionary Force in France, 1914-1918, and Commandant of the R.A.V.C. from 1932 to 1934. Sir John passed away after a long illness at his home, 15, Hampstead Hill Gardens, N.W., at a London hospital on Sunday last, at the age of 75 years.

Of no man could it be said more fittingly that he left the impress of his worth on everything he undertook; it is no matter for surprise, therefore, that in his chosen sphere of life-work, the Army Veterinary Service, he succeeded when the opportunity came to him—and triumphantly so during the great testing time of the campaign in France and Flanders—in keeping his branch of the army at the highest level of efficiency and prestige, despite the strain of the astonishingly rapid expansion of the personnel at his command.

In the Army Sir John Moore's untiring energy and robust strength, yoked as they were to a genial and lovable disposition, brought out the highest qualities of those under him, to whom he looked in the quietly confident expectation that their best would be forthcoming. By all, alike in military and civil life, he was recognised as an able administrator and a man of vision whose ideas could be trusted as practicable. Thus he was enabled to contribute very materially to the fulfilment of his dual ideal—the full justification of the Veterinary Service as an essential in the field, and the recognition by the State and the public that the veterinary profession should be accorded high status and the work of its members recognised as of vital importance to any community in which the pursuit of agriculture is accepted as a primary factor in the national well being. His influence in the military sphere, moreover, was greatly enhanced by the acceptance of the fact that he was a practical veterinary surgeon in every sense of the word; he encouraged specialisation and had a sound knowledge of modern scientific methods. The great story of his military career is told, all too barely, later in this outline.

Sir John Moore's life after retirement, in 1921, from active participation in the military arena, every aspect of which he loved, constituted a complete refutation of the popular misconception of the leisurely existence of the retired Army officer. By him, retirement was seen as an opportunity to follow other worth-while paths of service—for the Royal Veterinary College, of which he became a Governor; for the Governing Body of the profession, on the Council of which he served from 1922 to 1930, and for the National Veterinary Medical Association, as a member of Council and a member of the Editorial Committee, of which he was Chairman for two periods of three years.

Sir John's period of service in that arduous and responsible chairmanship was not merely a "record" in duration: it typified his assiduous devotion to duty, for he rarely missed a meeting. Throughout his membership of the committee, moreover, he was an ever-ready source of help in the preparation of reviews of reports on military and other activities of which he had special knowledge. Further, in pursuance of what was perhaps his greatest voluntary interest, he was a staunch supporter of those organisations which have as their *raison d'être* the well-being of the horse and the maintenance of horse transport. On the formation of the National Horse Association he was elected a member of the Council and held the appointment of

President in 1923. A member of the Council of the Hunters' Improvement Society, he was also a member of the Shire Horse Society, the National Pony Society, and the Van Horse Parade and Cart Horse Parade Societies.

His contributions to the proceedings of the learned societies were mainly on equine subjects. He spoke authoritatively at meetings of the Central Veterinary Society, of which he was an honoured member, and many will remember his masterly contribution on "The Horse as a National Economic Factor," to the Newcastle Congress of 1928, when his contention, backed by costing comparisons supplied by many transport concerns, that the horse was economically the superior of the motor over short journeys, was supported by an impressive symposium of influential opinion. The military aspect of horse usage was not omitted, and in view of recent arrivals in the sphere of operations in the present war, prophetic interest attaches to the words in which Sir John concluded his reply to the discussion on that memorable occasion: "We cannot do without horses in Army work despite the advance of mechanised operations." The horse has had no doughtier champion than he. In 1933 he was appointed to represent the interests of the owners of horse-drawn vehicles in London on the London and Home Counties Traffic Advisory Committee, and he never allowed to pass any opportunity of pressing the claims of the horse for retention in the transport system. The range of his interests and accomplishments is further illustrated by his appointment as Veterinary Surgeon to the London County Council, by his membership of the Agricultural Research Council; the Economic Advisory Council (Cattle Diseases Committee); the Tuberculosis Committee of the Medical Research Council, and the Committee of the Metropolitan Drinking Fountain and Cattle Trough Association. On retiring from the Army he was appointed Consulting Veterinary Adviser to the Metropolitan Asylums Board in London, while a major interest which he shared with, amongst many others, the late Sir Frederick Hobday, is reflected in his having been unanimously elected, in 1928, President of the Section of Comparative Medicine of the Royal Society of Medicine.

Sir John has aptly been described as the possessor of great social qualities: he was for many years one of the most popular members of the "Knights of the Round Table."

During his long period of impaired health all his fellow-workers in the many fields of endeavour in which Sir John worked so helpfully have missed him sorely; now that his loss is irrevocable, their sorrow and that felt throughout the profession of which he was a well-loved and honoured figure, will be merged into gratitude for a long and truly beneficial life of single-minded devotion to duty in whatever sphere he found himself.

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Early Years

John Moore was a sturdy, genial Northumbrian. Born of yeoman stock at Longhirst, Morpeth, on May 24th, 1864, he was the fourth son of the late Mr. John Moore. The fact that his uncle, the late Lieutenant-Colonel R. Moore, was of the Army Veterinary Department, coupled with his own knowledgeable association with the animals of the farm, appears to have determined him upon a veterinary career, and he duly entered upon the then three years' course. His career at Edinburgh was a distinguished one, for awards prior to his graduation on April 22nd, 1885, included four of the silver medals presented by the Highland and Agricultural Society of Scotland, the gold medal presented by Professor Williams for the best student in the first and second years, and the Second Fitz-Wygram prize of £30 (1885). Shortly after the termination of a period of four and a half years in practice with Tedbar Hopkin, in Manchester, John Moore secured his Fellowship (April 24th, 1890).

Distinguished Army Career

It was on December 18th, 1889, that he was appointed to a Commission in the Army as Veterinary Surgeon. He was promoted Veterinary Surgeon, First Class, on December 18th, 1899; Major November, 1900; Lieutenant-Colonel December 12th, 1906; Colonel October 15th, 1913; Brigadier-General August 5th, 1914; Major-General January 1st, 1918.

Sir John Moore's record of active service was remarkable and represents an experience shared by few soldiers. It began with the Suakim Expedition of 1896—following two years at Cawnpore and four years on horse remount purchasing duty at Calcutta—when he served with the Indian Contingent under Sir Charles Egerton in the Sudan, from June to November of that year. He was then attached to the 3rd Dragoon Guards as Veterinary Officer at Woolwich in December, 1896, and at York in 1897-98.

Sir John was employed with the Remount Purchasing Commission in the Argentine in 1898, and had charge of a shipment of horses to South Africa. In the same year he returned to England and rejoined the 3rd Dragoon Guards, accompanying that regiment to Dundalk, Ireland. In July, 1899, he was a member of a party of officers under Colonel (afterwards Lord) Plumer who saw service in Rhodesia and the Transvaal, and he was present at the Relief of Mafeking on May 17th, 1900. Returning to England in October of that year, he proceeded with a Remount Purchasing Commission to the U.S.A., until the close of the South African War. He held the appointment of Commandant, Lathrop Remount Depot, through which some 90,000 horses and mules passed, all of which were subjected to the mallein test (subcutaneous method) before shipment to South Africa. In June, 1902, he returned to Home Service and was attached to the Remount Department at the War Office for Registration of Horses for the Army Reserve.

Two years later, with Colonel Richard Lawley, 7th Hussars, he proceeded to Canada and the U.S.A., to prepare a scheme for horse purchase in the event of war, and it was on this scheme that animals were bought during the Great War. He also visited Mexico to report on Remount possibilities in that country.

In November, 1905, he again proceeded to India for a tour of five years. In 1906 he was promoted to the rank of Lieutenant-Colonel and appointed Inspecting Veterinary Officer, Eastern Command, India, and in 1907 Deputy Principal Veterinary Officer at Army Headquarters, Simla. This was followed by a period of service as Assistant Director of Veterinary Services, Northern Command, York, he being then transferred to the Irish Command in the same capacity. In December, 1913, he was posted to the Aldershot Command as Deputy Director of Veterinary Services,

and held that appointment up to the outbreak of war, when again he found himself on active service.

The Great War

On August 5th, 1914, he proceeded to France as Director of Veterinary Services of the British Expeditionary Force, in the rank of Brigadier-General. In the words of the article published in tribute to Sir John Moore in this journal on June 2nd, 1934, on the occasion of the celebration of the seventieth anniversary of his birth: "It was the protracted struggle on the Western Front which provided the heaviest responsibilities and at the same time the greatest scope for Sir John's foresight, judgment and driving power. A few statistics indicate the unprecedented magnitude of his charge.

"The Royal Army Veterinary Corps personnel under his command in that theatre of the Great War attained the colossal figure of 767 officers and 16,400 other ranks. The Veterinary Hospitals carried an average of 35,000 patients. Notwithstanding such vast issues, Sir John's mastership of detail was impressive beyond measure. He never failed in his memorisation of every officer's name and posting, and there were very few he did not know personally. He seldom worked less than 16 hours a day over the period of four years and there were occasions when his apparent immunity from fatigue left the younger members of the staff feeling somewhat chastened at their own inferior powers of endurance. The darkest days of 1918 never impaired his cheerfulness and his conviction that the Allies would prevail."

Dispersal of the enormous numbers of animals not required by the post-war Army, which presented one of the problems of the phase of demobilisation, was a task transferred to Sir John's Directorate at his own suggestion. Between February 1st and the last day of March he had disposed, profitably to the State and with adequate safeguards against future mis-usage, of no less than 150,000 of the 200,000 animals concerned. "His wise policy and bold leadership had averted something which might well have proved catastrophic in its reverberations, and had reaped a four-fold harvest: it had saved the consumption of thousands of tons of forage; it helped the French farmer to begin his efforts to restore his bespoiled lands; it put, approximately, 4½ million pounds sterling into our national exchequer, and made possible the speedier return to civil life of thousands of the troops."

Further Military Service

After the conclusion of the Great War Sir John was appointed Director of Veterinary Services in India, and left England in April, 1919, to take up that appointment. At that time trouble existed in Afghanistan, and along the North-West Frontier, and his first duty was to visit those regions to make dispositions with regard to veterinary services, particularly in respect of the control of rinderpest and foot-and-mouth disease amongst Army transport bullocks and surra in camels. This entailed visits to military posts in the Kyber Pass, Kohat, Bannu, Waziristan and Quetta in Baluchistan.

Sir John Moore represented that conditions there rendered urgently necessary the creation of an Army Veterinary Corps on a self-contained basis. At the request of the Commander-in-Chief, India, this was considered by the Advisory Council and approved by the Esher Committee who visited India for the purpose of reorganising the Indian Army. It was finally sanctioned by the Government of India Army Department under Army Instruction (India) No. 1007, dated at Delhi on December 14th, 1929.

Meanwhile, eight years before, Sir John had retired on attaining the age limit of 57 years. He was appointed Colonel-Commandant of the Royal Army Veterinary Corps on June 27th, 1932, holding that appointment until he reached the regulation age limit for all such posts, 70 years.

He was then, in the biblical sense, full of years—also of honour. For his services with the Dongola Expedition in 1896 he received the medal and the Khedive's Medal; in the South African Campaign he was awarded the Queen's Medal with three clasps; seven times had he been mentioned in despatches, once in the South Africa War of 1899-1902, and six times during the Great War. He also received successively the honours of C.M.G., C.B. and K.C.M.G., while his services in France were recognised by the French Government, who conferred upon him the decoration of Officer of the Order of the Legion of Honour.

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To Sir John Moore's devoted helpmeet, Lady Moore, and their three daughters, we extend, on behalf of the profession, deepest sympathy in their bereavement. Lady Moore is the daughter of the late Mr. Benjamin Murphy, of Prior Park, Clonmel, they were married in 1903.

The interment, which was private, took place at Quainton Parish Church, Bucks, yesterday.

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A PERSONAL TRIBUTE

With his death it may not be inappropriate to attempt to depict, on a more intimate note than any record of General Moore's career and military attainments can do, the man himself.

His monument will be for ever his brilliant leadership of that vast veterinary army which played its part so successfully while the tide of war ebbed and flowed in Flanders more than 20 years ago. No member of our profession had ever been called upon to organise and command a Force of 767 veterinary officers and 16,400 other ranks. It appears unlikely that one will be called upon to do so again.

Foremost among his attributes were his vision, steadfastness of purpose and robustness of body and mind.

The relatively sudden translation from full vigour to the long period of ill-health which preceded his death was as unexpected as it was tragic.

During the war years, his prescience was remarkable and his forecasts of current requirements, based often on the most slender data, were accurate to an almost uncanny degree.

Once his mind was made up on a matter of policy he pursued it with unswerving determination. If a proposal was rejected on its first presentation to those in higher authority Moore would return to the attack again and again.

The fact that he invariably won his point was due no less to his inward conviction that what he was asking for was right and necessary than to his genial persistence in stating his case.

His constitution was such that it withstood over four years of unremitted war responsibility without sickness or flagging although it may be that the strain imposed contributed to the impairment of health which manifested itself later.

Sir John Moore had deep religious beliefs and was outspoken in his aversion to anything weak or vicious.

A great Army Veterinarian has passed from among us but he has left behind a great record of achievement which did not pass unrecognised.

A. A. P.

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The Late MAJOR-GENERAL W. DUNLOP SMITH, C.B., C.M.G., D.S.O.

It is with deep regret that we record the death, which took place on the 19th instant, of Major-General W. D. Smith, a former Director-General, Army Veterinary Services.

William Dunlop Smith was born at Armagh on August 14th, 1865, and graduated from the Glasgow Veterinary College on May 24th, 1888.

He received his commission as Veterinary Lieutenant in September, 1892, and first saw active service with the Expedition to Dongola in 1896, on the conclusion of which he was mentioned in despatches. Two years later he accompanied the Nile Expedition, was present at the battle of Khartoum and was again mentioned in despatches for gallantry in the field.

The South African campaign, during which he was one of the defenders of Mafeking, brought further recognition and accelerated promotion to Veterinary Captain.

During the war of 1914-18, he held important administrative appointments in France and Mesopotamia, was five times mentioned in despatches and awarded the D.S.O. and C.M.G. In 1921 he was created C.B. and appointed Director-General, Army Veterinary Services, which office he held until he retired on expiration of his tenure in 1925.

Our sympathy is extended to Mrs. Smith and her son in their bereavement.

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Funeral of Major T. H. Hobson, T.D., F.R.C.V.S.

The funeral of Major Thomas Harry Hobson, of Leicester, whose death we recorded with much regret in our last issue, took place at Holy Trinity Church on February 2nd, when the large assembly included members of the veterinary profession and many representatives of Freemasonry, Major Hobson having been for 21 years steward of St. John's Lodge. The service was conducted by the Curate-in-Charge, the Rev. S. G. Wakeling, assisted by the Vicar of St. Mary de Castro, the Rev. J. R. Collins. Members of the Royal College present in addition to Mr. Harry Thornton, were Mr. Charles Haywood, Mr. E. J. Burndred and Mr. W. L. Sheffield.

Errata.—"The Virulence of *Br. abortus* for Laboratory Animals and Pregnant Cattle" by A. D. McEwen, *Vet. Rec.*, February 10th, 1940. On page 98 the top figure of column 3 in Table I should read 10 and not 20. In the same table all the figures referring to infection with strains 817, 888 and Alexander by the eye route should read one dilution lower.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Feb. 21st.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, 1, Wimpole Street, W., 2.30 p.m.
Feb. 22nd.—N.V.M.A. Sub-committee on Field Trials, 11 a.m.; N.V.M.A. Finance and General Purposes Committee, 2 p.m.
Feb. 24th.—Annual Meeting of the Scottish Metropolitan Division, N.V.M.A., at Edinburgh, 11 a.m.
Feb. 26th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.
Feb. 28th.—Annual General Meeting of the Lancashire Division, N.V.M.A., at Manchester, 2.30 p.m.
Feb. 29th.—Voting Papers issued to overseas members (R.C.V.S. Council Election).
Mar. 1st.—Meeting of the South Wales Division, N.V.M.A., at Carmarthen, 2.30 p.m.
Mar. 18th.—R.C.V.S. Examinations at Reading.
April 1st.—R.C.V.S. Annual Fees due.
May 9th.—Last date for nominations, R.C.V.S. Council Election.
May 14th.—Provisional date for commencement of R.C.V.S. Animal Management Examination.
May 23rd.—Issue of R.C.V.S. Annual Report and Voting Papers.
May 30th.—Last date for receipt of R.C.V.S. Council Election Voting Papers.
June 6th.—**R.C.V.S. Annual General Meeting.** Victoria Veterinary Benevolent Fund Annual General Meeting.
June 27th.—R.C.V.S. Written Examinations begin.
July 3rd.—Provisional date for commencement of R.C.V.S. Oral and Practical Examinations.

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Adviser on Animal Health in the Colonial Office

Appointment of Mr. John Smith, O.B.E., M.R.C.V.S., D.V.H.

Our readers will be gratified to learn that the National Veterinary Medical Association has been notified by Mr. Secretary MacDonald that, having given further consideration to the question of appointing an Adviser on Animal Health in the Colonial Office, he has concluded that it would be inexpedient, in present circumstances, that the restoration of this post should be further postponed. He has accordingly decided to constitute the appointment on a part-time basis, for a period of two years in the first instance.

We are glad to be able to intimate, further, that the appointment has been offered to and accepted by Mr. John Smith, O.B.E., M.R.C.V.S., D.V.H., who already has taken up his duties at the Colonial Office, the appointment dating from February 12th.

This important appointment will be dealt with fully in our next issue. We would not delay, however, in voicing, on behalf of the profession, the warmest appreciation of the sympathetic consideration given by the Colonial Secretary to the further representations recently made by the Association.

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N.V.M.A. Congress and Annual General Meeting, 1940

The receipt by the General Secretary of the National Veterinary Medical Association of enquiries concerning the holding of a Congress this year, prompts us to draw

attention to the acceptance by Council (announced in our issue of February 3rd) of the recommendation of the Finance and General Purposes Committee that, in view of the changed conditions brought about by the war, the arrangements for holding the 1940 Congress of the Association at Southport be abandoned. The question of the date and place of the Annual General Meeting is under consideration by the Committee.

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A Historic Occasion

Last week there took place, at 10, Red Lion Square, W.C., the first meeting of a joint committee in the history of the Royal College of Veterinary Surgeons and the National Veterinary Medical Association, namely the joint committee set up to discuss the relationship of the Veterinary Profession with the various Animal Welfare Societies. We would like to take this opportunity of expressing our earnest hope that this unique occasion will be a good augury of the fullest future co-operation.

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National A.R.P. Animals Committee

LECTURES AT THE ROYAL VETERINARY COLLEGE

The subject of the fourth of the series of lectures being given by Mr. H. E. Bywater, M.R.C.V.S., at the Beaumont Lecture Theatre, Royal Veterinary College, will be "Effects of Mustard Gas on Animals and the First Aid Treatment." It is hoped that veterinary surgeons will support these lectures. The lecture notified will take place on Tuesday next at 2.30 p.m.

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PERSONAL

Appointment.—Mr. D. L. Hughes, M.R.C.V.S., DIP. BACT. (Lond.), of the Research Institute in Animal Pathology, Royal Veterinary College, Lecturer in Bacteriology in the Department of Pathology, has been appointed to the post of Second Scientific Assistant at the Agricultural Research Council Field Station at Compton, Berks. Mr. Hughes takes up his duties on April 1st.

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Colonial Veterinary Service Appointments.—Mr. R. Coulthard, M.R.C.V.S., Veterinary Officer, Nigeria, has been promoted Senior Veterinary Officer; Mr. R. M. Gambles, M.A. (CANTAB.), M.R.C.V.S., B.SC., Veterinary Research Officer, Palestine, has been appointed Veterinary Officer, Cyprus.

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Retirement.—The Colonial Office announces that Captain W. S. Aitken, M.R.C.V.S., Senior Veterinary Research Officer, Uganda, has arrived in this country on leave preparatory to his retirement in June.

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FOOD POLICY OF THE CABINET

"The speeches made in the second reading debate on on the Agriculture (Miscellaneous War Provisions) Bill," observed *The Times* in its issue of Monday last, "ranged over a wide field, and the actual provisions of the Bill became rather obscured by general criticisms of the Government's ideas of what is necessary to fit agriculture for its great war-time effort. The feeling on all sides of the House, following Mr. Lloyd George's lead for the second time in a fortnight, appeared to be that this measure does not go nearly far enough to meet the needs of the nation.

"In this debate a member of the War Cabinet, Sir Samuel Hoare, intervened specially to show the interest of the War Cabinet in the question of war-time food production and to assure the House that the voice of the Minister of Agriculture is heard when important decisions affecting food supplies and home production are being taken. Sir Samuel Hoare announced that there is now a committee, over which he presides, constantly sitting to deal with the questions connected with the Ministry of Food on the one hand and the Ministry of Agriculture on the other, and that these questions are discussed very frequently in the War Cabinet itself.

"Such assurances that the nation's food policy is being unified are welcome. For some time farmers have felt that the food production campaign was being handicapped by divergencies of view between the Ministry of Food and the Ministry of Agriculture. They have unabated confidence in their champion, Sir Reginald Dorman-Smith, but the Ministry of Food has not appeared on several occasions to understand the case for establishing good prices for home produce in order to maintain and increase the output in the face of rising costs of production. Farmers have been allowed some price increases, varying a great deal, but averaging about 20 per cent. since the war started, and the Chancellor of the Exchequer told the House on Thursday the cost to the Treasury of the various subventions which the Ministry of Food now makes to keep down the retail prices of milk, meat, and other commodities. But it is open to question whether the Ministry of Food has established sufficiently close contacts with the home producers of food. The food distributive trades appear to be well represented in the Department's deliberations, but decisions vitally affecting producers' interests are apparently taken without previous consultation with the National Farmers' Union or any representative producers."

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CREDITS FOR FARMERS

Space did not allow of more than a reference in our last issue to the provisions of the Agriculture (War Provisions) Bill, which had its second reading in the Commons on February 6th. During the debate details of the new Government credit scheme for farmers were revealed. The Bill provides that where a farmer needs such materials as seeds and fertilisers, or the services of contractors for ploughing and harvesting, and cannot obtain them through normal channels, he will apply to his County War Agricultural Committee. If the Committee are satisfied that the requisites are needed to comply with directions issued under the food production campaign, they can then arrange for them to be supplied to the farmer. In return, the farmer will agree to pay the cost, plus interest at the rate of 5 per cent. a year within a specified time. In default of payment, the cost will be deducted from the money due to the farmer from the Government after harvest.

M.P.s strongly protested against the proposal to charge 5 per cent. interest, and asked for a scheme on a much wider basis. Farmers, they said, were being asked to give their services generously, and the Government should be just as generous to them. The Government were reminded that they had lent the railways £26,000,000 at 2½ per cent. Why could they not do the same for agriculture?

Mr. Lloyd George, who soundly rated the Government on its general policy towards agriculture, declared that the profit the farmer would get would not enable him to pay the 5 per cent. The Bill was a Treasury Bill and not what the Minister of Agriculture had asked for. They could not dig for victory with a pair of Treasury scissors. "In this Bill," he said, "the Minister of Agriculture is fettered by every limb. You can hear the clank of his chains, fixed and hampered on him by the Chancellor of the Exchequer."

NORTHERN IRELAND MINISTRY TO INTRODUCE BILL

The Northern Ireland Minister of Agriculture will shortly introduce a Bill in the N.I. Parliament which

will enable them to give assistance to small farmers on somewhat similar lines to the provisions of the Agriculture (Miscellaneous War Provisions) Bill being introduced at Westminster. As indicated above, the British Bill involves the creation of a financial aid scheme for small farmers, and the granting of power to the county war executive committees to grant fertilisers and seeds and free ploughing facilities to such farmers whose financial position would otherwise make their possible war effort negligible.

The Northern Ireland county committees of agriculture have no executive powers at present, but it is probable that under the terms of the Bill to be introduced by the Ulster Ministry they will be granted sufficient agency powers to carry out similar work to that to be carried out in Great Britain by the county war executive committees.

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LEGAL NOTES

The Camel a Domestic Animal

After a two-day hearing last week, the Court of Appeal dismissed the appeal by the plaintiff, Mr. Robert McQuaker, of Cumberland Street, S.W., from a judgment of Mr. Justice Branson given at Kingston Assizes in favour of the defendant, Mr. R. S. Goddard, proprietor of the Chessington Zoo, in an action brought by Mr. McQuaker claiming damages from Mr. Goddard for personal injuries received by him when he was bitten by a camel at the Chessington Zoo owing, as he alleged to the negligence of Mr. Goddard.

The appeal raised the question whether a camel was an animal within the domestic class so as to make it necessary to prove *scienter*, as it was held to be by Mr. Justice Branson at the Kingston at the Kingston Assizes.

Mr. Harold Brown appeared for the appellant; Mr. Eric Neve, K.C., and Mr. A. A. Pereira for the respondent.

Mr. Brown said that on August 3rd, 1938, Mr. McQuaker visited the Chessington Zoo with a woman friend as members of the public, paying for admission. It was a fine summer day, and they had brought a picnic lunch which they ate sitting on a lawn adjoining the camel enclosure. That enclosure was separated by a rabbit-wire fence 6 ft. high.

Mr. McQuaker knew nothing about camels. He saw some children feeding the camels, and having some apples over from his lunch he walked over to the enclosure with them. A camel put its head over the fence, and Mr. McQuaker gave it three apples, which it took from him normally. When he tendered it a fourth apple the camel seized his hand and savaged it so severely that he would probably never be able to resume his employment as a mechanic.

The day after the accident, said counsel, Mr. Goddard caused to be erected by the camel enclosure a notice which read: " All camels bite. Do not feed out of your hand."

Counsel said that he had two contentions: (1) that the camel was not a domestic animal; and (2) that, apart from that, there was evidence of negligence on the part of Mr. Goddard to go to the jury.

It had been stated that there was not such a thing as a wild camel, but in his submission an animal might be domesticated in its native country and yet wild in England. Merely because camels had been harnessed to the use of man did not mean that they had lost all their wild propensities.

Counsel referred to May *v.* Burdett (9 Q.B. 101), where the animal in question was a monkey, and Filburn *v.* People's Palace Company (25 Q.B.D. 258), where the animal was an elephant. The only case which he had been able to find concerning a camel was a decision of the Chief Justice of Western Australia, who held that a camel was a domestic animal in Western Australia, but expressed the opinion that it would not be so in England.

Mr. Neve, for Mr. Goddard, said that the question whether the camel was a domestic animal or not was a matter for the Judge to decide in law on facts brought before him by way of evidence. That evidence showed overwhelmingly that the camel was a domestic animal.

To succeed in the appeal Mr. Goddard would have to persuade the Court to create a third class of animals, those which, although domesticated, were known to be dangerous to mankind. That would only make the law ridiculous.

Judgment

The Times reports the judgment as follows:—

Lord Justice Scott said that, by the old common law of England, the rule was laid down that domestic animals were regarded in quite a different light from wild animals. Wild animals were assumed to be dangerous to human beings. Domestic animals were not regarded as dangerous. The owner of a wild animal must keep it in at his peril, so that if he let it out he was liable for any injury which might be caused. On the other hand, in the case of domestic animals, the presumption was the other way. The plaintiff had to prove that the defendant was aware of a particular propensity in the animal to injure human beings. Unless that knowledge were proved, there was at common law no liability on the defendant.

It was argued strongly that the camel stood in a different category from ordinary domestic animals because it was not domestic in England. That argument was fallacious. If the animal did not exist in a wild state in any part of the world it had ceased to be a wild animal. It had become trained to the uses of man and *ex hypothesi* had become trained to associate with man. It was well to remember that it was the function of the Judge and not the jury to decide whether an animal belonged to the class of wild animals or the class of domestic animals. It was enough to say that in this case the Judge rightly decided that the camel must be regarded as a domestic animal.

If that were so, any cause of action which the plaintiff had could not be put on the higher ground of absolute duty as in the case of a wild animal likely to escape and do damage. His only course was either to prove knowledge by the defendant of a general propensity in any camel to bite, or else to establish a case of negligence. There was no evidence that at the time the plaintiff was injured the defendant had any knowledge that this camel had a propensity to bite.

It was submitted that, as the defendant was the keeper of a zoological garden, it should be presumed that he had expert knowledge of the habits of camels and knew that they had a general propensity to bite. But on the facts as proved in evidence no such propensity was established. There was, further, no evidence of knowledge by the defendant that this particular camel had a propensity to bite and no evidence that it had in fact a propensity to bite. The Judge was right in not leaving any issue on that part of the case to the jury.

The other aspect of the case was that of negligence. The plaintiff contended that the defendant should have known that so flimsy and ineffective a fence as the wire-netting was not sufficient. But that submission really rested on the assumption that the defendant knew that there was danger of the camel's biting someone. If he did not know that, there was no duty on him to have a more effective fence. Aldham *v.* United Dairies (London), Limited (56 *The Times* L.R. 201), was a case where there was independent evidence of negligence and for that reason it had no bearing on the present case. The appeal must be dismissed.

Lord Justice MacKinnon and Lord Justice Clauson delivered judgment to the same effect.

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The United Counties Hunters' Society has appointed a committee of management for the war period, with power to hold a show if considered advisable. They are to consider a suggestion that a modified show for breeding classes be held this year.

CORRESPONDENCE

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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MEAT INSPECTION SERVICE

To the Editor of the Veterinary Record

Sir,—In the current negotiations and discussions on the question of improved meat inspection it would appear that the Ministry of Health and Department of Health for Scotland are proving a complicating factor by their claim to the right to retain control of this highly important service.

Would it be unfair to ask that the justness of this claim be judged on the evidence afforded by an impartial survey of existing arrangements supported by a progress report on the subject, by the authorities involved covering such number of years as might be considered suitable?

So far as Scotland is concerned, I am convinced that such evidence would show the need for drastic change for, although some centres maintain a very high standard, in many places the arrangements are so inadequate as to be almost farcical.

Might we not support the memorandum detailed in the *Record* of February 3rd by a statement that, given the opportunity, the profession will build a meat inspection service of a standard hitherto only dreamed of in this country?

Yours faithfully,

John C. Grant.

The North of Scotland College of Agriculture,
Veterinary Department,
Marischal College, Aberdeen.

February 6th, 1940.

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EARLY SEPTICAEMIA IN ANTHRAX

To the Editor of the Veterinary Record

Sir,—May I add one more case to those of Mr. Barron and Mr. Crosfield concerning anthrax?

A farmer spoke to me on the telephone saying that he had a cow which had been off colour for a *week* and that he was proposing to have her killed. He asked me if I thought this would be in order. I told him to wait until I arrived, which was about ten minutes later. However, I was not in time, and the animal had been stunned and her throat cut by the cowman, who greeted me with his arms and clothes covered in blood.

A microscopic examination was made on the spot and anthrax bacilli were found in large numbers, which was confirmed by the Ministry of Agriculture. The animal had probably been ill longer than the time given by the farmer. No other cases occurred on the farm—not even the cowman.

It has been shown, of course, that cattle may recover from an anthrax infection, but the above case is perhaps worth recording owing to the length of time that the animal had been ill.

Yours faithfully,

Norman P. Male.

Veterinary Infirmary,
50, Friar Street,
Reading.

February 12th, 1940.

OLD SERVANTS OF THE ROYAL VETERINARY COLLEGE

To the Editor of the Veterinary Record

Sir,—May we, as recent graduates, endorse the remarks of your correspondents regarding the four old servants of the Royal Veterinary College who have, to use their own words, "got the sack"?

Both during our time as students and house surgeons, these men were able, and did do much in countless small ways, to help in overcoming occasional but inevitable difficulties. Their individual qualities have been aptly summarised in the letter in the *Record* of February 3rd.

We regret, not only the severance of their long association with the Royal Veterinary College, but the manner of it. We appreciate the enormous financial burden thrown on the College by the costs of evacuation (we wonder whether this will prove to have been to the best advantage of the student body!), but, even so, it could be wished that in some way the blow might have been softened. In the normal course these men would have looked forward, in the not too distant future, to a secure and comfortable retirement after many years of service to the College, and it is doubly hard that they should be thrown upon a war-time world when the very fact of their being "old" servants will militate against their chances of re-employment.

However, the fact remains, and we can only hope the appreciation, both abstract and material, expressed by their many friends, will do a little to mitigate the baldness of their dismissal.

Yours faithfully,

Joan O. Joshua.
Ruth Teverson.

78, Brentway,
Finchley, N.3.

February 5th, 1940.

. . . . .

To the Editor of the Veterinary Record

Sir,—With reference to the letter in the *Veterinary Record* of the 3rd inst. over the signatures of Hancock *et al.* it has come as a great blow to the many friends of these old servants of the Royal Veterinary College, and the others not mentioned, that such treatment should be meted out after so many years of faithful service. The fact that charity has been mooted must be a heart-breaking degradation to them.

The reason for their dismissal appears to be the transference of the College activities to more tranquil pastures. In my time, at any rate, the College students (and I think our teachers) were noted for their "toughness," and if any London college evacuated it is certain that the Royal Veterinary College would have been the last. The trepidation that has caused this "jittering" is unworthy of the past. It would have been a joy to hear Professor Macqueen's remarks about it. In my view, a few efficient shelters would have cost an infinitesimal amount compared to the bill paid for evacuation (which seems to be a secret!) and these grand men would not have received their cup of bitterness.

Now that many firms are returning to London, what about the R.V.C. coming back and giving the men their jobs? If this remains impossible, and remembering that Edinburgh has had the bulk of the bombs so far, how about renting the Royal Veterinary College to the "Dick" College for safety?

I am, Sir,
Yours faithfully,
A. B. MacIntyre.

8, Westgate Road,
Beckenham,
Kent.

February 6th, 1940.

Contents

PAGE

GENERAL ARTICLES:

Livestock Development in Nigeria W. W. HENDERSON 137

The Hydrogen Ion Concentration of Vaginal Secretions of Cows ... S. H. McNUTT, L. H. SCHWARTE and D. F. EVELETH 140

EDITORIAL:

An Adviser on Animal Health in the Colonial Office—A Welcome Decision 143

CLINICAL COMMUNICATION:

Parturition in the Capuchin Monkey CONNIE M. FORD 145

ABSTRACTS:

Sulphanilamide in the Treatment of Streptococcic Mastitis (Gildow, E. M., Fourt, D. L., and Shaw, A. O.) ... ... D. D. O. 146

Effect of Ferric Sulphate and Copper Sulphate on Coccidiosis in Lambs (Spindler, L. A.) J. N. O. 146

Trichinosis (McNellis, R.) ... D. D. O. 146

A Note on the Occurrence of *Br. abortus* Agglutinins in Farm Horses in the East of Scotland (Taylor, A. W.) ... ... S. J. E. 146

The Sanitary Control of Milk Supplies Distant from the Laboratory (Hale, M. W.) ... D. D. O. 147

New Tables of Organisation (Rep. Vet. Bull. U.S. Army) ... ... D. D. O. 147

PAGE

REPORT:

Uganda Protectorate: Annual Report of the Veterinary Department for the year ended December 31st, 1938 ... ... R. F. 148

Mr. John Smith, O.B.E., M.R.C.V.S., D.V.H.: Adviser on Animal Health in the Colonial Office 148

IN PARLIAMENT: Colonial Development 149

NOTES AND NEWS:

Livestock not covered by Farm Credit Plan ... 144

Accredited Licences 144

Society's Grant for Suffolk Stallions 153

Diary of Events 153

National A.R.P. Animals Committee 153

Personal 153

R.C.V.S. Obituary 153

Legal Notes 154

Agriculture "As Vital as Munitions" 154

Censoring of Scientific Journals 154

Fish Liver Oils for Poultry 154

CORRESPONDENCE:

Tuberculin Testing ... ... C. W. ABRAMS 155

Bacteriological Examination of Meat ALEXANDER MOLDAWSKY 155

Anthrax in Swine ... ... J. E. SAUNDERS 156

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